UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,280	06/19/2001	Clifford L. Hersh	PA1763US	3918

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CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303

EXAMINER
CAMPBELL, JOSHUA D

ART UNIT	PAPER NUMBER
2178	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/884,280	HERSH, CLIFFORD L.
	Examiner	Art Unit	
	Joshua D. Campbell	2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 August 2005_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-17_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _13 and 14_ is/are allowed.

6)☒ Claim(s) _1-12, 15 and 16_ is/are rejected.

7)☒ Claim(s) _17_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications: Amendment filed on 08/29/2005.

2.   Claims 1-14 are pending in this case. Claims 1, 4-9, and 11-15 are independent claims. Claims 15-17 have been newly added. Claims 13 and 14 have been amended.

3.   The rejection of claims 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over Gostanian et al. (hereinafter Gostanian, US Patent Number 5,781,910, issued on July 14, 1998) in view of Chen et al. (hereinafter Chen, US Patent Number 4,901,230, issued February 13, 1990) has been withdrawn based on the amendments to those claims.

Allowable Subject Matter

4.   Claims 13 and 14 are allowed.

5.   Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6.   The following is a statement of reasons for the indication of allowable subject matter:

Regarding amended independent claims 13 and 14 and dependent claim 7, none of the references, either singularly or in combination, teach or suggest to a person of ordinary skill in the art at the time of the invention the amended feature, "...executing the computational operations if one but not the other of the computational operations

violates the limit, both computational operations operate upon the same element, and both computational operations are assignment operations that assign the same value to the same element." The examiner notes that while making determinations based on limits and commutativity is not a novel feature (See Examiner Referenced Patents and Non-patent Literature), but in combination with the other limitations of the method steps and system functions of the independent claim (i.e. executing the computational operations if one but not the other of the computational operations violates the limit, both computational operations operate upon the same element, and both computational operations are assignment operations that assign the same value to the same element.) the limitations of claims 7, 13, and 14 are considered novel, and unobvious to a person of ordinary skill in the art at the time the invention was made in view of the prior art of record. The examiner has found no evidence in the prior art that two identical assignment operations would be compared to the same limit, where one of them violates the limit and one of them does not, even though they are in fact identical operations, and based on this reasoning the operations are executed, because of the fact that the two identical operations have different outcomes when determining whether they violate the same limit the limitations of the amended claims are unobvious, and thus the limitations of claims 7, 13, and 14 are considered novel, and unobvious to a person of ordinary skill in the art at the time the invention was made in view of the prior art of record.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 4-6, and 9-11 remain rejected under 35 U.S.C. 102(b) as being anticipated by Gostanian et al. (hereinafter Gostanian, US Patent Number 5,781,910, issued on July 14, 1998).

Regarding independent claim 1, Gostanian discloses a method in which it is determined that two or more operations are operable on the same element and that the operations are in kind operations (column 10, line 15-column 11, line 10 of Gostanian). It is then determined that the operations are addition operations, thus commutative (column 10, line 15-column 11, line 10 of Gostanian).

Regarding dependent claim 2, Gostanian discloses a method in which it is determined that the result of two operations is listed as commutative and thus are allowed to execute if it is determined that the result would be identical if the operations were run in any order, which would include two identical assignment statements (column 10, line 15-column 11, line 10 of Gostanian).

Regarding independent claims 4-6, 9, and 11, the claims incorporate substantially similar subject matter as claim 1. Thus, the claims are rejected under the same rationale as claim 1.

Regarding dependent claims 10, the claim incorporates substantially similar subject matter as claim 2. Thus, the claim is rejected under the same rationale as claim 2.

Regarding independent claims 12 and 13, Gostanian discloses a method in which computation operations will be executed based on no direct limits (thus no limit is violated) and other requirements are met (column 10, line 15-column 11, line 10 of Gostanian). In one case, the operations will be executed if they are not operational on the same elements (column 10, line 15-column 11, line 10 of Gostanian). In another case they will execute if they operate on the same element and they are both addition (column 10, line 15-column 11, line 10 of Gostanian). In yet another case they will execute if they operate on the same element and they are assigning the same value to the element, based on the fact that Gostanian discloses a method in which it is determined that the result of two operations is listed as commutative and thus are allowed to execute if it is determined that the result would be identical if the operations were run in any order, which would include two identical assignment statements (column 10, line 15-column 11, line 10 of Gostanian).

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 3, 7, 8, 12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Gostanian et al. (hereinafter Gostanian, US Patent Number

5,781,910, issued on July 14, 1998) in view of Chen et al. (hereinafter Chen, US Patent

Number 4,901,230, issued February 13, 1990).

Regarding dependent claim 3, Gostanian does not directly disclose a method

in which it is determined whether the computational operations violate a limit then the

operations are considered to be a failure and not executed. However, Chen discloses a

method in which it is determined whether the computational operations violate a limit

then the operations are considered to be a failure and not executed (column 17, lines

18-67, and column 3, lines 43-53). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to have combined the methods of Chen with

the methods of Gostanian because using limits would have provided boundaries for the

data and thus allowed control over data changes.

Regarding independent claims 7 and 8, Gostanian discloses a method in

which it is determined that the result of two operations is listed as commutative and thus

are allowed to execute if it is determined that the result would be identical if the

operations were run in any order (column 10, line 15-column 11, line 10 of Gostanian).

Gostanian does not directly disclose a method in which it is determined whether the

computational operations violate a limit then the operations are considered to be not

commutative. However, Chen discloses a method in which it is determined whether the

computational operations violate a limit then the operations are considered to be a

failure and not executed (column 17, lines 18-67, and column 3, lines 43-53). It would

have been obvious to one of ordinary skill in the art at the time the invention was made

to have combined the methods of Chen with the methods of Gostanian because using

limits would have provided boundaries for the data and thus allowed control over data

changes.

Regarding independent claims 12, In one case, the operations will be executed

if they are not operational on the same elements (column 10, line 15-column 11, line 10

of Gostanian). In another case they will execute if they operate on the same element

and they are both addition (column 10, line 15-column 11, line 10 of Gostanian). In yet

another case they will execute if they operate on the same element and they are

assigning the same value to the element, based on the fact that Gostanian discloses a

method in which it is determined that the result of two operations is listed as

commutative and thus are allowed to execute if it is determined that the result would be

identical if the operations were run in any order, which would include two identical

assignment statements (column 10, line 15-column 11, line 10 of Gostanian).

Gostanian does not directly disclose a method in which it is determined whether the

computational operations violate a limit then the operations are considered to be a

failure and not executed. However, Chen discloses a method in which it is determined

whether the computational operations violate a limit then the operations are considered

to be a failure and not executed (column 17, lines 18-67, and column 3, lines 43-53). It

would have been obvious to one of ordinary skill in the art at the time the invention was

made to have combined the methods of Chen with the methods of Gostanian because

using limits would have provided boundaries for the data and thus allowed control over

data changes.

Regarding independent claim 15 and dependent claim 16, In one case, the

operations will be executed if they are not operational on the same elements (column

10, line 15-column 11, line 10 of Gostanian). In another case they will execute if they

operate on the same element and they are both addition (column 10, line 15-column 11,

line 10 of Gostanian). In yet another case they will execute if they operate on the same

element and they are assigning the same value to the element, based on the fact that

Gostanian discloses a method in which it is determined that the result of two operations

is listed as commutative and thus are allowed to execute if it is determined that the

result would be identical if the operations were run in any order, which would include

two identical assignment statements (column 10, line 15-column 11, line 10 of

Gostanian). Gostanian does not directly disclose a method in which it is determined

whether the computational operations violate a limit then the operations are considered

to be a failure and not executed. However, Chen discloses a method in which it is

determined whether the computational operations violate a limit then the operations are

considered to be a failure and not executed (column 17, lines 18-67, and column 3,

lines 43-53). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have combined the methods of Chen with the methods of

Gostanian because using limits would have provided boundaries for the data and thus

allowed control over data changes..

Response to Arguments

11.   Applicant's arguments filed 03/21/2005 have been fully considered but they are
not persuasive.

Regarding the arguments on pages 10-17, regarding the limitations of claims 1,
4-6, and 9-11, the examiner believes that the Gostanian reference teaches the
limitations and thus the rejection stands. Specifically, Gostanian teaches that a
determination of protocol is made based on a determination of whether or not
transactions on data are commutative or non-commutative (column 10, lines 33-37 of
Gostanian). The first limitation of the claim reads, "...determining if any of the two or
more computational operations to be executed are operable upon a same element,"
commutative operations would be operable on the same element in the same state as it
currently is. Gostanian determines whether or not a specific operation and all of the
other operations that might be performed on the element are commutative, thus
operable on the same element in its current state (column 10, line 34-column 11, line 10
of Gostanian). The applicant argues that the transactions of Gostanian are not
operations that are "to be executed are operable on the same element", however the
determination of commutativity is based on how the transaction would reflect when
executed along with other transaction executions on the *same* specific data (column 10,
lines 37-41 of Gostanian, thus transactions are transactions that are "to be executed are
operable on the same element". The system of Gostanian has the ability to only
examine transactions that operate on the same element, it does not process
transactions not operable on the same element, thus some form of determination of this

fact is inherently made or the system would not function properly. The applicant points

out the term "might" as used in Gostanian, stating that the transactions "need not be

'operations to be executed'," however this is not a deficiency in the system of Gostanian

as compared to the applicant's invention, rather the system of Gostanian checks

transactions to be executed and transactions that will be executed in the future in

normal operation of the specific system. It is also important to note that the phrase, "to

be executed," has no time constraints at all, thus it does not clearly define that the

operations are to be executed immediately, eventually, 10 days from now, or 10 years

from now, thus the Gostanian reference meets the requirements of the invention as

claimed by checking operations that will possibly be executed eventually. As the

applicant's state (page 14, lines 12-16 of the Arguments section) "Gostanian determines

commutativity based on all transactions 'supported'," which by definition a supported

transaction is one that the programmer/system assumes will be executed, thus the need

to support it.

Applicant also argues that Gostanian does not teach, "...determining if any of two

or more computational operations determined to be operable upon the same element

are in kind operations," however Gostanian shows examples in which this determination

is used directly to select the protocol. In the first case, the system determines the

operations are all addition (in kind), thus commutative and the first protocol may be

used (column 10, lines 41-50 of Gostanian). However, in the second case one

transaction is addition while another is multiplication, which are not in kind transactions,

thus the second protocol is used (column 10, line 61-column 11, line 10 of Gostanian).

These two cases show that a determination of "in kind" or not "in kind" is made, and at the same time a determination of addition operations is also made, satisfying the third limitation of claim 1.

Regarding the arguments on pages 17-21, regarding the limitations of claims 2 and 10, the examiner believes that the Gostanian reference teaches the limitations and thus the rejection stands. Specifically, Gostanian teaches that a determination of protocol is made based on a determination of whether or not transactions on data are commutative or non-commutative (column 10, lines 33-37 of Gostanian). This determination is made by testing how data would be effected by the transactions being executed in different orders, if the final state is the same they are commutative, if it is not they are not commutative (column 10, lines 33-50 of Gostanian). The examples shown involve addition and multiplication, however this is not a limiting factor because they are merely examples of how the method would be carried out. By definition two transactions that are assignment transactions on the same element with the same assignment value (for instance: transaction 1 is A=3 and transaction 2 is A=3) when tested would result in an identical final states, thus be deemed commutative when operated in the method of Gostanian, and be allowed to execute under the open protocol (column 10, lines 37-41 of Gostanian). If the assignment transactions on the same element have different assignment values (for instance: transaction 1 is A=3 and transaction 2 is A=2), when the results are tested they would result in different final states, thus be deemed non-commutative by the method of Gostanian and not be allowed to be executed (column 10, line 51-column 11, line 10 of Gostanian). The

applicant argues that these teachings do not exist in Gostanian because the section cited is merely a definition of how to detect commutativity, however the examiner feels it necessary to point out that in this case the definition of how to detect commutativity is all that is necessary to reject the limitations as presented, and it remains unclear to the examiner why the rejection of the claims is improper because it is taught by a definition in the prior art.

Regarding the arguments on pages 21-23, regarding the limitations of claim 12, the examiner believes that the Gostanian reference teaches the limitations and thus the rejection stands. The arguments regarding claim 12 are substantially similar to the arguments regarding claim 1, thus the response to the arguments regarding claim 1 can be applied. However, claim 1 is silent to the limitation of "executing... if either computational operation does not violate a limit...", thus the arguments regarding that claim will be responded to here. The limit in question is not defined anywhere in the claim language, and there is no evident specific binding of the term limit in the specification. All computer programs and operations are restricted by physical limits, limits of memory, limits of instruction length, limits of a compiler, etc. In order for any operation to be executed on a computer it must comply with the limits of the system. The claim does not state that a limit check is made; it simply states that an operation will be executed, "...if either computation operation does not violate a limit." Thus until the word limit is further defined in a way that teaches away from this definition the claim will remain rejected properly.

Regarding the arguments on pages 24-25, regarding the limitations of claim 7,

the examiner believes that the Gostanian reference in combination with the Chen

reference teaches the limitations and thus the rejection stands. The Chen reference

teaches determining if operations violate a limit, and if they do violate a limit they are not

executed (column 17, lines 18-67, and column 3, lines 43-53 of Chen). Gostanian

teaches that if operations do not meet certain requirements (limits) they are viewed to

be not commutative and thus categorized as not commutative (column 10, line 15-

column 11, line 10 of Gostanian), thus in combination the two references teach the

limitations of the invention of claim 7 as they are currently claimed.
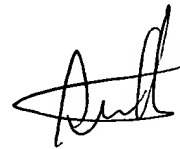

Conclusion

12.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Joshua D. Campbell whose telephone number is (571)
272-4133. The examiner can normally be reached on M-F (7:30 AM - 4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Stephen Hong can be reached on (571) 272-4124. The fax phone number
for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

JDC
October 25, 2005   **STEPHEN HONG**
                                                    SUPERVISORY PATENT EXAMINER